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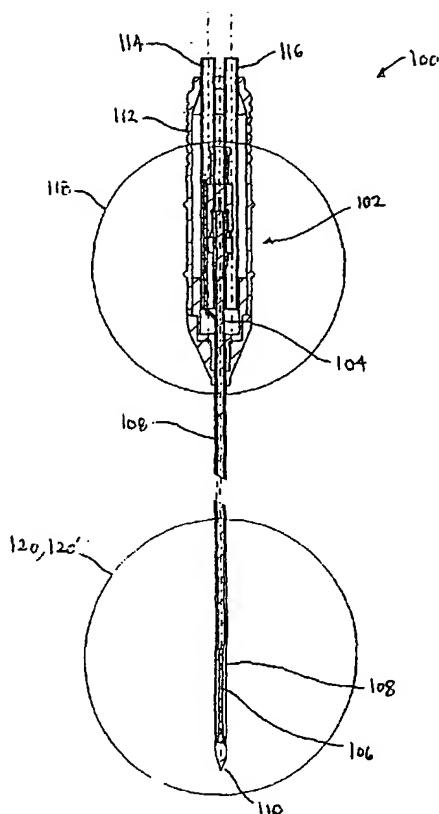
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[Continued on next page]

(54) Title: **DEVICES AND METHODS FOR COOLING MICROWAVE ANTENNAS**



(57) Abstract: Devices and methods for cooling microwave antennas are disclosed herein. The cooling systems (10) can be used with various types of microwave antennas. One variation generally comprises a handle portion with an elongate outer jacket extending from the handle portion. A microwave antenna is positioned within the handle and outer jacket such that cooling fluid pumped into the handle comes into contact directly along a portion of the length, or a majority of the length, or the entire length of the antenna to allow for direct convective cooling. Other variations include cooling sheaths which form defined cooling channels around a portion of the antenna. Yet another variation includes passively-cooled systems which utilize expandable balloons to urge tissue away from the surface of the microwave antenna as well as cooling sheaths which are cooled through endothermic chemical reactions. Furthermore, the microwave antennas themselves can have cooling lumens integrated directly therethrough.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

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US CL : 606/33

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 606/27-52

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,140,130 A (Storm, III) 20 February 1979 (20.02.1979), entire document.	1-16,20-56,61-77
Y	US 5,829,519 A (UTHE) 03 November 1998 (03.11.1998), entire document.	18 and 57-60
Y	US 5,281,217 A (Edwards et al.) 25 January 1994 (25.01.1994), entire document.	17
Y	US 5,964,755 A (Edwards) 12 October 1999 (12.10.1999), entire document.	19

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